

REMARKS/ARGUMENTS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Upon entry of the above amendments, claims 1-21 and 23-28, as amended, will be pending.

Claim 29 stands rejected under 35 U.S.C. §101. The cancellation of this claim renders this rejection moot.

Claims 1-28 stand rejected under 35 U.S.C. §102(b) as being anticipated by Eisenhart *et al.* (US 5,266,646) or Messner *et al.* (US 5,480,934). The Applicants assert that the invention as presently claimed is free of the prior art. Accordingly, the Applicants traverse these rejections for at least the following reasons.

Eisenhart discusses polymer particles which are said to be useful as thickeners for inks, adhesives, coatings, paints, pigment dispersants and the like. The polymer particles are prepared in a multi-stage polymerization process which involves polymerization of hydrophobic, ionizable and nonionic monomers. However, Eisenhart does not teach that the polymerization should be conducted at a temperature above the cloud point of a reactive amphiphile. In fact, Eisenhart makes no reference to cloud points of such monomers at all.

For instance, Eisenhart exemplifies polymerizations carried out in the presence of ethoxylated hydrophobic monomers, in aqueous based polymerization media. However, in view of the high degree of ethoxylation of these monomers, it is unlikely that any of them would have a cloud point close to the temperature at which the polymerizations were conducted. The trend of increasing cloud point with increasing monomer ethoxylation is seen in the table below¹ taken from N.M. Van Os, J.R. Haak, L.A.M. Rupert, *Physico-Chemical Properties of Selected Anionic, Cationic and Nonionic Surfactants*, Elsevier, Table III.1.2, page 210 (1993). Accordingly, it is believed that even the addition of a few extra ethoxylate units would elevate the cloud point to over 100°C.

¹ "C" refers to the length of the alkyl chain and "E" refers to the degree of ethoxylation.

Nonionic Surfactant	Cloud Point °C
C16E8	63
C16E9	75
C16E12	92

Messner discusses a method for preparing a low-viscosity, water-soluble polymeric dispersion useful as 1) a flocculant in the treatment of waste water; 2) a dehydrating agent after the aqueous phase is separated; 3) a retention agent in paper production; 4) a soil improvement agent; or 5) a dispersing agent. Messner further discusses the preparation of a water-soluble polymer (A) which involves polymerization of water-soluble and hydrophobic monomers, optionally together with an amphiphilic monomer. However, Messner also fails to teach a polymerization at a temperature of more than 5°C above the cloud point of the reactive amphiphile.

The only amphiphilic materials actually exemplified are ionic in nature and these would not normally be considered to have any cloud point at all. This view is supported by the following passage from R.J. Hunter, *Foundations of Colloid Science*, Oxford Science Publications 1987, page 571:

Raising the temperature has quite a different effect on ionic and nonionic surfactants. For ionics, there is a temperature (called the Krafft point) below which the solubility is quite low and the solution appears to contain no micelles.... Nonionics tend to behave in the opposite manner. As the temperature is raised, a point may be reached at which large aggregates of the nonionic separate out into a distinct phase and the temperature at which this occurs is referred to as the cloud point.

Still further, the Messner specification does not suggest conducting a polymerization at a temperature above the cloud point. For example, at column 8, lines 31 to 32 a polymerization temperature between 0 and 100°C is mentioned, preferably 40 to 55°C. The

actual exemplified temperatures for formation of the polymer dispersion were well below 55°C.² Therefore, Messner does not teach the claimed invention.

Accordingly, the Applicants respectfully request reconsideration and withdrawal of these rejections.

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

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² In some cases the temperature is subsequently raised to complete the polymerization but only for 1 hour out of a total of 4 hours processing. The polymer would be substantially formed by the time the temperature is raised.